



PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In the Application of:**

Loretta Ann Grezzo Page  
 Kathryn Amy Pearlstine  
 Waifong L. Anton

**CASE NO.: IJ-0005****SERIAL NO.: 09/120,608****GROUP ART UNIT: 1714****FILED: JULY 22, 1998****EXAMINER: C. SHOSHO****FOR: Water Insoluble Non-Ionic Graft Copolymers**

**Submission Accompanying  
Request For Continued Examination**

Assistant Commissioner for Patents  
 Washington, DC 20231

Sir:

This submission accompanies a Request for Continued Prosecution ("RCE") and is in response to the Final Office Action mailed April 10, 2000 and the Advisory Action mailed July 19, 2000. The time period set for response to the Office Action expired on July 7, 2000. A Petition for Extension of Time of Three Months accompanies this Submission so that it (and the accompanying RCE) may be considered as timely filed.

**REMARKS**

The claims are 6-12. No amendments are made and no new matter is added.

**Rejections Under 35 USC §103(a)**

Claims 6-12 stand rejected under 35 USC §103(a) as unpatentable over Ma et al., EP 0 851 014 ("Ma '014") in view of Ma et al., 5 085 698 ("Ma '698"). The Office position is that Ma '014 teaches an ink jet ink containing hydrosol polymers and that the hydrosol polymers are identical to the presently claimed film-forming binders and, therefore, must have the identical properties of solubility, washfastness, etc. The rejection is respectfully traversed.

The present invention comprises an ink jet ink having three essential components: an aqueous vehicle, a pigment dispersion and a film-forming binder. The gist of the invention (and what distinguishes the invention from Ma '014) lies in the interaction of the film-forming binder and the aqueous vehicle. In Ma '014, the hydrosol polymer and the vehicle are selected such

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that the polymer is dispersed in the vehicle. In the present application, the binder polymer and the vehicle are selected such that the polymer is soluble in the vehicle, but insoluble in water. As the Office has recognized, the "solubility of a polymer is inherent in its structure." (Advisory Action at page 2). If, by the term "structure", the Office means the monomer composition of the polymer as well as its architecture, then Applicants agree. Thus, identical polymers would be expected to have the identical solubility profile for a given vehicle. But that does not mean that identical polymers would have identical solubility profiles for different vehicles. Accordingly, the Office contention that the polymers of Ma '014 and those recited in the present claims are "identical" is not particularly relevant.

More specifically, Applicants refer to the enclosed Declaration of Kathryn Pearlstine, one of the named inventors of the present application. In her Declaration, Ms. Pearlstine presents experimental data demonstrating that the hydrosol polymers of Ma '014 do not have the same solubility as those disclosed in the present application in a given vehicle. Accordingly, by the Office's very own definition, these two polymers cannot be "identical."

To the extent the Office position is that the polymers of Ma '014 and those of the present invention could have identical structure and composition, Applicants agree. But that is irrelevant to the patentability issue. The claims do not merely recite an ink having a polymer of a certain composition and structure. Rather, the claims recite an ink containing a polymer having a specified structure and solubility which is not taught or suggested in Ma '014. Ma '014 specifically teaches that the hydrosol polymers are "dispersed as a separate phase". Page 4, lines 11-12 of Ma '014.

Applicants are aware of the Office interpretation of this phrase to mean that the hydrophilic parts of the polymers are soluble in the aqueous portion of the vehicle while the hydrophobic parts of the polymer are soluble in the non-aqueous portions of the vehicle. With all due respect to the Office interpretation, the Office has no right or authority to substitute its own understanding or interpretation, particularly when the Office interpretation is contrary to that generally used in the art and specifically used by the reference. In particular, the Ma '014 references uses the term "dispersed". The Condensed Chemical Dictionary, 10<sup>th</sup> Edition, published by Van Nostrand Reinhold Company (1981) defines "dispersion" as:

a two-phase system of which one phase consists of finely divided particles (often in the colloidal size range) distributed throughout a bulk substance, the particles being the disperse or internal phase and the bulk substance the continuous or external phase.

This definition is entirely consistent with the usage of the term "dispersed" in Ma '014, in which the hydrosol polymer is the disperse phase and the aqueous vehicle the continuous phase. Thus, the use of the term dispersed in Ma '014 is consistent with the conventional definition of the term.

By contrast, the Office interpretation is not consistent with the above quoted definition, nor any other definition of the term "dispersed" known to Applicants. Indeed, the Office interpretation appears to suggest that the hydrosol polymers of Ma '014 disassociate into hydrophilic and hydrophobic pieces upon mixing with the vehicle and that the vehicle itself has discrete areas of aqueous portions and non-aqueous portions. Applicants are not aware of any such phenomenon, nor are they aware of any teaching reference or text that would support such a concept. If the Office desires to maintain the interpretation expressed, Applicants respectfully submit that the Office must present an affidavit of fact or a reference to support this novel proposition regarding dispersions.

In view of the foregoing, as well as the fact that all prior rejections have been overcome, allowance of the above-referenced application is respectfully requested. If the Office is not prepared to allow the application in its present form, Applicants hereby request an in person interview with the Examiner to discuss the application further.

Respectfully submitted,



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Dated: 9 October 2000

Enclosures